Available online at www.sciencedirect.com
SCIENCE DIRECT®
ELSEVIER
Aquaculture 238 (2004) 541 - 544
Aquaculture
www.elsevier.com/locate/aqua-online

# Contents of *Aquaculture*, Volume 238

**VOL. 238 NOS. 1–4** **1 September 2004**

**Review article**

DNA marker technologies and their applications in aquaculture genetics
Z.J. Liu (Auburn, AL, USA) and J.F. Cordes (Gloucester Point, VA, USA) . . . . . 1

**Diseases**

18-kDa protein as a marker to detect WSSV infection in shrimps
S. Sathish, C. Selvakkumar (Chennai, India), A.S. Sahul Hameed (Tamil Nadu, India) and R.B. Narayanan (Chennai, India). . . . . 39

Attempt to validate breakpoint MIC values estimated from pharmacokinetic data obtained during oxolinic acid therapy of winter ulcer disease in Atlantic salmon (*Salmo salar*)
R. Coyne, Ø. Bergh, O. Samuelsen, K. Andersen, B.T. Lunestad, H. Nilsen (Bergen, Norway), I. Dalsgaard (Frederiksberg, Denmark) and P. Smith (Galway, Ireland). . . . . 51

Potentiation of antibody production in Indian major carp *Labeo rohita*, rohu, by *Achyranthes aspera* as a herbal feed ingredient
Y. Vasudeva Rao, M. Romesh, A. Singh and R. Chakrabarti (Delhi, India). . . . . 67

Improved growth of *Flavobacterium psychrophilum* using a new culture medium
C. Cepeda, S. García-Márquez and Y. Santos (Santiago de Compostela, Spain). . . . . 75

Susceptibility of spotted halibut *Verasper variegatus* (Pleuronectidae) to infection by the monogenean *Neobenedenia girellae* (Capsalidae) and oral therapy trials using praziquantel
N. Hirazawa, T. Mitsuboshi, T. Hirata and K. Shirasu (Oita, Japan). . . . . 83

Use of *Rosmarinus officinalis* as a treatment against *Streptococcus iniae* in tilapia (*Oreochromis* sp.)
S. Abutbul, A. Golan-Goldhirsh, O. Barazani and D. Zilberg (Israel). . . . . 97

High-M alginate immunostimulation of Atlantic halibut (*Hippoglossus hippoglossus* L.) larvae using *Artemia* for delivery, increases resistance against vibriosis
J. Skjermo (Trondheim, Norway) and Ø. Bergh (Bergen, Norway) . . . . . 107

Immune responses in different fullsib families of Indian major carp, *Labeo rohita*, exhibiting differential resistance to *Aeromonas hydrophila* infection
P.K. Sahoo, P.K. Meher, K.D. Mahapatra, J.N. Saha, R.K. Jana and P.V.G.K. Reddy (Orissa, India) . . . . . 115

Studies on the occurrence of *Macrobrachium rosenbergii* nodavirus and extra small virus-like particles associated with white tail disease of *M. rosenbergii* in India by RT-PCR detection
A.S. Sahul Hameed, K. Yoganandhan (Tamil Nadu, India), J. Sri Widada and J.R. Bonami (Montpellier, France). . . . . 127

Efficacy of hydrogen peroxide to control saprolegniasis on channel catfish (*Ictalurus punctatus*) eggs
J.J. Rach (La Crosse, WI, USA), J.J. Valentine (Warsaw, MO, USA), T.M. Schreier, M.P. Gaikowski (La Crosse, WI, USA) and T.G. Crawford (Warsaw, MO, USA) . . . . . 135

**Genetics**

DNA fingerprinting of selected *Laminaria* (Phaeophyta) gametophytes by RAPD markers
X.-L. Wang (Qingdao; Beijing, China), Y.-X. Yang, Y.-Z. Cong (Yantai, China) and D.-L. Duan (Qingdao, China) ..... 143
Establishment of fertile tetraploid population of blunt snout bream (*Megalobrama amblycephala*)
S. Zou, S. Li, W. Cai, J. Zhao and H. Yang (Shanghai, China) ..... 155
A genetic linkage map of common carp (*Cyprinus carpio* L.) And mapping of a locus associated with cold tolerance
X. Sun and L. Liang (Harbin, People's Republic of China) ..... 165

**Husbandry and Management**

Effects of age and size on reproductive performance of captive *Farfantepenaeus paulensis* broodstock
S. Peixoto, R.O. Cavalli, W. Wasielesky, F. D'Incao, D. Krummenauer and Á.M. Milach (Rio Grande, Brazil) ..... 173
Cryopreservation of sperm of red snapper (*Lutjanus campechanus*)
K.L. Riley, C.G. Holladay (Baton Rouge, LA, USA), E.J. Chesney (Chauvin, LA, USA) and T.R. Tiersch (Baton Rouge, LA, USA) ..... 183
Rearing performance of *Spongia officinalis* on suspended ropes off the Southern Italian Coast (Central Mediterranean Sea)
G. Corriero, C. Longo, M. Mercurio, C. Nonnis Marzano, G. Lembo and M.T. Spedicato (Bari, Italy) ..... 195
Effect of water motion on the cultivation of the economic seaweed *Gracilaria parvispora* (Rhodophyta) on Molokai, Hawaii
E. Ryder, S.G. Nelson, C. McKeon, E.P. Glenn, K. Fitzsimmons (Tucson, AZ, USA) and S. Napolean (Molokai, HI, USA) ..... 207
Aquaculture potential of the common octopus (*Octopus vulgaris* Cuvier, 1797): a review
P. Vas-Pires, P. Seixas and A. Barbosa (Oporto, Portugal) ..... 221
The combined effects of temperature and salinity on growth and survival of juvenile mud crabs (*Scylla serrata* Forskål)
I.M. Ruscoe, C.C. Shelley and G.R. Williams (Darwin, Australia) ..... 239
Observations on the life cycle of *Procambarus acutus acutus* in South Carolina culture ponds
Y. Mazlum and A.G. Eversole (Clemson, SC, USA) ..... 249
The potential of using iron-oxide-rich soils for minimizing the detrimental effects of $H_2S$ in freshwater aquaculture systems
O. Lahav, G. Ritvo, I. Slijper (Haifa, Israel), G. Hearne (Johannesburg, South Africa) and M. Cochva (Haifa, Israel) ..... 263

**Nutrition**

Consumption vs. deposition of essential fatty acids in gilthead sea bream (*Sparus aurata*) larvae fed semi-purified diets
J.H. Robin and A. Peron (France) ..... 283
Expression and activities of pancreatic enzymes in developing sea bass larvae (*Dicentrarchus labrax*) in relation to intact and hydrolyzed dietary protein; involvement of cholecystokinin
C. Cahu (Plouzané, France), I. Rønnestad (Bergen, Norway), V. Grangier and J.L. Zambonino Infante (Plouzané, France) ..... 295
Body composition, growth performance, and product quality of rainbow trout (*Oncorhynchus mykiss*) fed diets containing poultry fat, soybean/corn lecithin, or menhaden oil
K.K.M. Liu (Seattle, WA, USA), F.T. Barrows (Bozeman, MT, USA), R.W. Hardy (Hagerman, ID, USA) and F.M. Dong (Urbana, IL, USA) ..... 309

Effects of starvation and dietary lipid on the lipid and fatty acid composition of muscle tissue of juvenile green abalone (*Haliotis fulgens*)
E. Durazo-Beltrán, M.T. Viana (Ensenada, Mexico), L.R. D'Abramo (Mississippi, MS, USA) and J.F. Toro-Vazquez (San Luis Potosi, Mexico) . . . . . 329
Digestive enzyme activities in starved pre-slaughter farmed and wild-captured, Atlantic cod (*Gadus morhua*)
A. Gildberg (Tromsø, Norway) . . . . . 343
Coating crystalline methionine with tripalmitin-polyvinyl alcohol slows its absorption in the intestine of Nile tilapia, *Oreochromis niloticus*
M.A. Segovia-Quintero and R.C. Reigh (Baton Rouge, LA, USA) . . . . . 355
Dietary supplementation with arachidonic acid alters the stress response of gilthead seabream (*Sparus aurata*) larvae
R.D. Van Anholt (Nijmegen, The Netherlands), W.M. Koven, S. Lutzky (Eilat, Israel) and S.E. Wendelaar Bonga (Nijmegen, The Netherlands) . . . . . 369
Optimum zinc supplementation level in Nile tilapia *Oreochromis niloticus* juveniles diets
M.V. do Carmo e Sá, L.E. Pezzato, M.M.B. Ferreira Lima and P. de Magalhães Padilha (Botucatu, Brazil) . . . . . 385

**Physiology and Endocrinology**

Induction of gynogenesis in the turbot (*Scophthalmus maximus*): Effects of UV irradiation on sperm motility, the Hertwig effect and viability during the first 6 months of age
F. Piferrer (Barcelona, Spain), R.M. Cal, C. Gómez, B. Álvarez-Blázquez (Vigo, Spain), J. Castro and P. Martínez (Lugo, Spain) . . . . . 403
Effect of short-term temperature reduction on ovulation and LHRHa responsiveness in female Atlantic salmon (*Salmo salar*) maintained at elevated water temperatures
H.R. King (Launceston, Wayatinah, Australia) and N.W. Pankhurst (Launceston, Australia) . . . . . 421
Ingestion and assimilation of three species of freshwater algae by larval tilapia *Oreochromis niloticus*
J. Lu, T. Takeuchi and H. Satoh (Tokyo, Japan) . . . . . 437
Seasonal variation in weight and biochemical composition of the tissues of *Ruditapes decussatus* in relation to the gametogenic cycle
J. Ojea (Ribadeo, Spain), A.J. Pazos (Santiago de Compostela, Spain), D. Martínez, S. Novoa (Ribadeo, Spain), J.L. Sánchez and M. Abad (Santiago de Compostela, Spain) . . . . . 451
Effect of isoeugenol sedation on plasma cortisol, glucose, and lactate dynamics in channel catfish *Ictalurus punctatus* exposed to three stressors
B.C. Small (Stoneville, MS, USA) . . . . . 469
Effects of sex steroids on gonadal development and gender determination in the sea scallop, *Placopecten magellanicus*
C. Wang and R.P. Croll (Halifax, Nova Scotia, Canada) . . . . . 483
Excretion of ammonia and urea by phylogenetically diverse fish species in low salinities
I. Altinok (Trabzon, Turkey) and J.M. Grizzle (Auburn, Alabama, USA) . . . . . 499
The effects of saline environments on survival and growth of eggs and larvae of *Chirostoma estor estor* Jordan 1880 (Pisces: Atherinidae)
C.A. Martínez-Palacios (Morelia, Mexico), J.C. Morte (Stirling, UK), J.A. Tello-Ballinas, M. Toledo-Cuevas (Morelia, Mexico) and L.G. Ross (Stirling, UK) . . . . . 509

**Short Communications**

Effects of captivity and eyestalk ablation on antioxidant status of shrimps (*Farfantepenaeus paulensis*)
E.A. Almeida, R.L. Petersen, E.R. Andreatta and A.C.D. Bainy (Florianópolis, Brazil) . . . . . 523
Induction of ovulation in endemic pearl mullet (*Chalcalburnus tarichi*), living in the highly alkaline Lake Van, using GnRHa ([D-Ser(*t* Bu)$^{6}$,Pro$^{9}$-Net]-GnRH) combined with haloperidol
M. Arabacı and M. Sarı (Van, Turkey) . . . . . 529

**Erratum**

Erratum to "Amino acid pools of rotifers and *Artemia* under different conditions: nutritional implications for fish larvae" [Aquaculture 234 (2004) 429–445]
C. Aragão, L.E.C. Conceição, M.T. Dinis (Faro, Portugal) and H.-J. Fyhn (Bergen, Norway) . . . . . 537

**Contents of *Aquaculture*, Volume 238** . . . . . 541